

Chapter 15

Basic Thinking and Policy & Suggestion to Enhance GEC

Under the multiple pressures of traditional development pattern frustration, economic restructuring, industrial technology innovation, etc., the strong will for worldwide economic transition and economic resurgence & growth is driving the countries to explore the new engine to lead economic growth and the new advantage to reshape international competition. Undoubtedly, the development of new energy and clean energy, the response to climate change and the development of green economy become the important breakthrough for the transformation of global economic development pattern, attract antecedent attention in all countries and are highlighted as the focus of global agenda. It is just in the “storm region” of such a focus that the debate and gaming are conducted on environment among the developed countries and between the developed countries and the developing countries. So to speak, to enhance the environment competitiveness will represent a potential and sustaining power of the economic development of a country or region and relate to the sustainable development of the national or regional economy. The international competition in the future will be centered on environment and become the most vital phenomenon in the area of international competition. The strength of environment competitiveness will directly concern the comprehensive strength of the countries and regions in economy, science, etc. as well as the position of them in international competition. To enhance the environment competitiveness will become the necessary choice and action of all countries and regions.

15.1 Basic Thinking to Enhance GEC

Environment competitiveness is a comprehensive system, including natural environment and ecological environment, environment quality and environmental safety as well as the management and coordination of governments and society for environment. So, the enhancement of environment competitiveness is a systematic project relating to multiple aspects of politics, economy and society. Besides, since

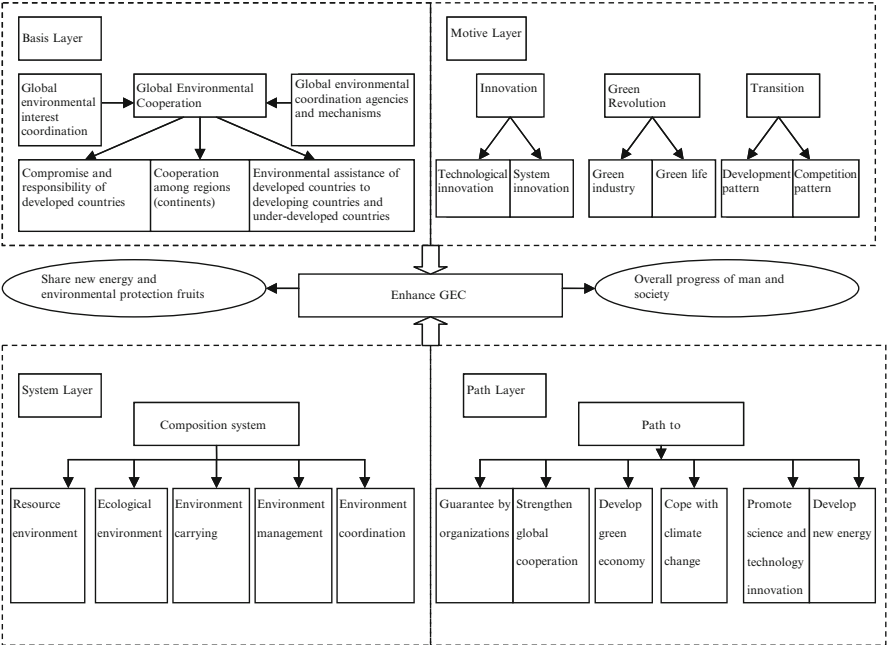


Fig. 15.1 Basic thinking framework to enhance GEC

environment is borderless and the environmental pollution is spreading, the international environmental cooperation is the necessary choice to enhance GEC. Nevertheless, due to the active demand of developed countries for new energy from economic development mode and reindustrialization, during the process of industrialization that the developing countries explore the new approach to address environmental issues and the combined action that the whole world respond to climate change, there are both the mutual interest and the individual interest of the countries and the regions and how to coordinate the interests is the key to environmental issues. It also implies it's a gradual process in proper sequence to enhance GEC, not only confronted with high economic cost but also challenged by high social cost possibly.

In combination with the dynamic evaluation results and the pressure confronted by global environment at present, this report raises the basic thinking framework to enhance GEC. Highlighting one basis, three motive powers, five systems and six paths and forming four aspects of basis layer, motive layer, system layer and path layer (see Fig. 15.1), this framework aims to realize the enhancement of GEC through the coordination and cooperation of all layers and thus to promote the world to get rid of the restriction of resource energy, share the new energy and environmental protection fruits and achieve the overall progress of man and society.

15.1.1 Global Environmental Cooperation Is the Basis to Enhance GEC

Environmental influence is not limited by regional and national boundaries and is characterized by typical externality. Due to the spreading and uncontrollability of environmental destruction and pollution, the event of environmental pollution or environmental safety occurring in a country or region usually endangers the countries and regions around and even causes worldwide environmental disaster. The scarcity of resources has become a common problem confronted by the entire world and the contention for resources usually triggers the conflict and turbulence among countries and results in the instability of world political and economic development. Furthermore, the environmental problems are also beyond social system and beyond ideology: the environmental problems of pollution, climate change, etc. exist in a country of any system. Exclusion and fighting are not the good way to address global environmental problem, but may result in resource waste and increase of social cost. Therefore, to enhance GEC, we shall strengthen global cooperation, organize and establish global environmental cooperation and coordination agencies and build relevant coordination mechanism with coordinating global environmental interest as the core. The developed countries shall lower its strong stance and offer a compromise to take the responsibility for their industrialization; and meanwhile, keep their promises in fund and technique to strengthen the environmental assistance for developing countries. The regions (continents) shall, around common environmental objective, eliminate differences and develop bilateral and multilateral cooperation; based on global common interest, strengthen global dialogue and negotiation and translate them into concerted action as soon as possible, cope with and address global environmental problems jointly and promote the coordinated improvement of GEC.

15.1.2 Transition, Innovation and Green Revolution Are the Motive Powers to Drive the Improvement of GEC

Undergoing the blow of financial crisis and the continued downturn of global economy, from USA and Europe climbing out from the debts to the emerging economies undergoing inflation and slowing down its growth, global economy seems to enter into a period of seeking transition in vibration deceleration. Transition is to transform the economic development pattern, break through the restriction of traditional development mode, change the development pattern with high output relying on high input, readjust the industrial structure and consumption structure and explore the engine to lead a new round of economic growth. Thus, to develop the strategic emerging industries such as new energy and build new industrial mode and consumption mode are the main direction for global economic transition and the important guarantee for

the countries to improve their international status. Innovation includes technological innovation and system innovation. Technological innovation can provide technological support to develop new energy and clean energy and cope with climate change, ensure the reindustrialization in developed countries and the reconstruction of real economy system and ensure the successful advance of new industrialization process in developing countries not at the expense of environment. System innovation means forming the mutual restriction of the countries and regions by establishing global environmental protection system and mechanism to ensure the action concordance of the countries. The development of green revolution around green economy has become the new trend of global economy for green transition. Green revolution, in production, requires developing green agriculture, green industry and green service industry and constructing green industrial system; in consumption, green revolution advocates green consumption pattern and realize green fair employment to give new impetus to GEC under the dynamics of transition, innovation and green revolution.

15.1.3 To Enhance the Five Sub-Indexes Jointly Is the key Point to Enhance GEC

In the GEC indicator system built in this report, GEC is decomposed into five aspects: REC, EEC, ECC, EMC and EHC. These five aspects summarize the content and scope of environment competitiveness and offer a comprehension of environment in an all-around way, including not only the real capacity contained in environment itself applicable for direct comparison such as resources and biology but also the impetus and the potential for development injected by the outside for management and coordination of environment as well as the sustaining power to strengthen environment carrying capacity. The five systems are not isolated, but influence and restrict one another. For instance, the performance of resource environment and ecological environment will influence the difficulty of environment management, the strength of environment management will also concern the degree of environmental influence directly and environment coordination will influence the mode of environment management. Therefore, the five systems shall be integrated into an overall system to enhance environment competitiveness with emphasis on some and meanwhile overall planning for all during concrete implementation process under the premise of concerted general objective. Of course, due to the variation differences of regional and environmental basis, the countries and regions are not uniform in the system of environment composition. The countries and regions shall give full play to the leading action of advantageous indicators, overcome the adverse influence of weak indicators and meanwhile dissect the indicator system layer by layer, find out the key link that restricts the improvement of environment competitiveness and make joint efforts to enhance GEC.

15.1.4 Global Vision and Dynamic Perception Are the Means of Seeking the Path to Enhance GEC

Environmental problem is a global problem. To solve environmental problem, we shall aim at global common interest to form concerted actions worldwide. What's more, environmental problem is not only an existing problem but also an inter-generation problem. We shall focus on long-term sustainable development as well as the resolution of current problems thus to achieve inter-generation equity in a better way. The arising of environmental problems is a process of long-term accumulation; the resolution of environmental problems and the improvement of environment competitiveness also need a long-term process. Furthermore, as new environmental problems emerge continually, the environmental problems become much more complex and we shall shift in thinking and change the innovation pattern continually. As social productivity develops and human civilization advances, the countries and regions understand environment more and more profoundly and protect environment by more and more scientific means. The emerging and practical exploration of the concepts like green economy, recycling economy and low-carbon economy also continually adds new content to the GEC indicator system. So, we shall seek the paths to enhance GEC by dynamic perception in combination with the important task and the urgency of global environmental protection at present around the ultimate goal of global sharing and overall progress of man and society. The paths to enhance GEC include strengthening the guarantee of organization, strengthening global cooperation, developing green economy, responding to climate change, promoting science and technology innovation, developing new energy and clean energy, etc. All these paths are interlaced with the basis and motive powers to enhance GEC, which cover the overall content of outer support and capacity building required by environment competitiveness.

15.2 Policy & Suggestion to Enhance GEC

When global environmental problems have crossed the boundaries of countries and regions currently, it requires all the countries to innovate continually hand in hand. All the countries shall consider development, transition and environmental protection in a comprehensive way, make efforts to achieve mutual coordination and promotion between environment and economy and add new contribution to sustainable development of the world.

15.2.1 To Develop Green Economy Greatly and Advance New Thinking of Sustainable Development

In October 2008, United Nations Environment Programme (UNEP) launched the Green New Deal, advocating developing green economy worldwide with great efforts and proposing the strategy of saving the world from financial crisis by Green New Deal. Green economy is an economic development mode, which, covering the main content of resource-conserving and environment-friendly economy and emphasizing on the integration of economic efficiency, social efficiency and ecological efficiency maximization, can realize the sustainable development of population, resources and environment coordination. The effective implementation of “Green New Deal” and the development of green economy can lay a sound foundation to realize the strategic target of sustainable development. The whole countries, especially the developed countries, pay much attention to the development of green economy and take green economy as the new trend of global sustainable development. It has become the global consensus and important direction to deal with global economic crisis, promote economic restructuring and enhance national competitiveness by developing green economy.

To develop green economy, the development idea of green economy shall run through all areas of economic and social development as well as all links of industrial development. In resource utilization and environmental protection, it requires replacing material resources with intelligence resource to greater degree and in larger scale, enhancing the utilization efficiency of resources, reducing the emission of pollution, and controlling resource consumption within the threshold of resource regeneration and pollution emission within the threshold of natural purification. To solve environmental pollution, we shall change from “terminal improvement” to the safety production of “all-process cleaning”, try to separate economic growth from resource consumption, environmental pollution and ecological damage and realize the coordination between economic development and resource utilization and environmental protection. All the countries shall attach importance to the enhancement of ecological system stability, take effective measures to protect biodiversity and the overall resilience of ecological system; actively advance global new energy revolution, greatly develop renewable energy sources, promote the application of new energies such as nuclear energy, solar energy, wind energy, tidal energy, biologic energy, ocean energy and geothermal energy, reduce the consumption of fossil energy; accelerate economic restructuring and industrial structure optimization, develop the “light” industry and green industry with high knowledge content, less environmental pollution, less resource consumption, strong agglomeration and radiation capacities, guide resource integration and allocation towards green industry and construct modern green economic and industrial system; increase green investment, improve the investing and financing channels of green finance, strengthen the credit aid to new energy enterprises, give play to the impetus of government investment, develop green economy by attracting venture capital investment, angel investment and stock equity fund, etc. with green credit policy and

provide the fund guarantee for the development of green economy; advocate green consumption conception, encourage green consumption by the measures of government procurement and green product subsidy, guide consumers to buy energy-saving products and green products, facilitate the forming of sustainable green consumption mode worldwide and realize the good interaction between green production and green consumption. The all countries shall also accelerate to formulate the strategic planning of green economic development, confirm the target, task and important aspects of green economic development, comprehensively coordinate the relevant national policies and the actions of interest subjects, accelerate to establish the green system of national accounts reflecting the values of ecological capital and environmental capital, give full play to the guarantee action of market mechanism, laws and regulations, science and technology innovation and system innovation in promoting green economic development and lay the foundation for facilitating global sustainable development and realizing the “green transition” of traditional “brown economy”.

15.2.2 To Cope with Global Climate Change Positively and Promote the Healthy Development of Low-Carbon Economy

Climate change is the vital global problem confronted by the man for living and development and it is mainly characterized by global climate warming. It has become global focus and world consensus to respond to climate change and implement low-carbon development. The all countries and regions shall further improve their policies of industry, public finance & taxation, finance, technology and consumption to deal with climate change; emphasize on controlling greenhouse gas emission and mitigating climate change by the policy means of regulations and standards, taxation, convertible permit, voluntary agreement, subsidy and encouragement, etc.; establish the greenhouse gas emissions trading system, guide voluntary trading activities on emission reduction; establish complete low-carbon product standard, label and certification system and build the data base of low-carbon certification; improve the system of government agencies purchasing low-carbon products and promote the coordination and interaction between low-carbon production system and consumption system. In basic research and technological research responding to climate change, we shall emphasize on the basic theoretical research such as global environment monitoring, climate change assessment and the forecasting of global climate change trend in the future, intensify the organization and coordination of scientific and technical work responding to climate change, strengthen the construction of science and technology supporting system responding to climate change, establish the subject and R&D fund specially for climate change, advance the R&D of key low-carbon technology; build and improve the statistical and accounting system and the appraisal and examination

system on greenhouse gas emission, strengthen the statistics and investigation on energy activity, industrial production, agriculture and forestry related to greenhouse gas emission, provide the accurate information in time on greenhouse gas emission monitoring, statistics and accounting, establish the target responsibility system and the appraisal and examination system controlling greenhouse gas emission, and enhance the consciousness and initiative responding to climate change; greatly develop low-carbon energy, try to reduce the consumption of high-carbon energy such as coal and petroleum, increase the proportion of relatively clean and low-carbon natural gas energy, advocate the utilization of “zero-carbon energy” such as solar energy, wind energy and tidal energy, pay adequate attention to the energy conservation and emission reduction of the key fields of industry, construction and transportation, reduce the emission of greenhouse gases such as carbon dioxide and increase forest carbon sink, enhance the capacity of forest absorption and carbon dioxide storage and increase the absorption of greenhouse gases by forest planting, etc., try to realize the win-win low-carbon and green economic development pattern for economic and social development and ecological environmental protection.

15.2.3 To Enhance the Ability of Science & Technology Innovation and Support the Coordinated Development of Service Environment and Economy

Science and technology innovation plays an important role in supporting and leading the human beings to enhance environment improvement. The economic development is unsustainable just depending on resource input and energy consumption; real sustainable development can be realized only through science and technology innovation and driven by innovation. The sustainable development of environment and economy led by science and technology innovation requires reassembling, optimizing and upgrading the capital, labor and all kinds of material resources by means of the innovation factors such as science and technology, knowledge, modern enterprise management system and commercial operation mode thus to improve the ability of science and technology innovation as well as the internal motive power of economic sustainable development and to form the endogenous growth of economy.

To enhance the ability of science and technology innovation, the cooperation of government, production, study and research shall be strengthened further among governments, colleges and universities, research institutions and enterprises to improve the construction of science and technology innovation system. The governments shall further give play to the organization and coordination action in facilitating science and technology innovation, increase the public R&D

input in green technology and low-carbon technology, formulate the related policies of fiscal and taxation policies, financial support, personnel training and intellectual property rights to encourage science and technology innovation, establish special fund to support the independent technical innovation of “green” enterprises, compose interest compensation mechanism and risk sharing mechanism to promote the introduction, absorption and integration of technological innovation. As the subject of innovation system, enterprises shall strengthen the connection with research institutions and colleges and universities, give full play to the innovation advantage of colleges and universities, research institutions and enterprises in basic research, application research and experiment development, build the technological innovation organizations such as research institutions and industrial technology alliance in combination, carry out the activities of science and technology innovation for green technology and low-carbon technology, enhance the ability of science and technology innovation and the ability to transform science and technology innovation into real productivity. The intermediary service agencies such as technology transfer center, high-tech enterprise incubator and technical exchange market shall also give full play to the intermediary advantage and the lubricating action, provide green technical exchange platform and green technology introduction channel, promote the diffusion & application and commercial transformation of green technology achievement; accelerate to build and improve innovative alliances, strengthen the connection of innovation systems among the countries and regions, promote the free flow, sharing and complementation of innovative resources, concentrate advantageous resources to overcome the material problems and key areas related to climate change, energy-conservation & emission-reduction, energy safety, resource utilization efficiency and pollution control; by developing the technology of energy-conservation & emission-reduction, low-carbon technology, the technology of resource recycling utilization and the utilization technology high efficiency and cleaning, reduce the proportion of non-renewable resources like coal in energy structure, develop new energy, renewable energy and new alternative energy and enhance the utilization efficiency of resources and energy practically; strengthen the R&D and industrialization process of no-harm-to-the-environment technology, reduce the utilization of natural resources and the discharge of wastes, develop various green production technologies and waste-to-resource technologies to provide sound technological support for the development of green economy and the realization of sustainable development; by science and technology innovation, realize the optimization and upgrading of industrial structure, realize the substitution of intelligence resource and innovation resource for environmental and material resources as well as the knowledgeable and ecological transition of economic activities, realize the transition of resource-intensive enterprise to technology-intensive and environmental-protection enterprise to promote the sustainable development of global economy.

15.2.4 To Strengthen International Cooperation and Form the Robust Composite Force for Global Environment Improvement

International environmental cooperation means the cooperation of countries and other subjects of international action in the area of environmental protection, taking collective actions to respond to and solve the occurred environmental problems with common influence on the world or the occurring actions with damage or damage threat to global environment thus to achieve the target of seeking common interest of mankind. Protecting environment is the common responsibility and task of the universe; expanding and deepening international environmental cooperation is the only way to promote global sustainable development. Only by cooperation, the consensus can be reached; only by cooperation, the joint development can be realized; only by cooperation, global environmental problems can be solved entirely.

Both developed and developing countries shall strengthen the environmental cooperation, based on their own national conditions, insist on the principle of “common but differentiated responsibilities”: the developed countries undertake more responsibilities and obligations to compensate for the climate “debt” caused by them for over-consumption of natural resources and massive emissions of greenhouse gases during the process of industrialization. Many a developing countries are in the of rapid development stage of industrialization and urbanization, on one hand, confronted with the arduous tasks of poverty eradication, economic development, economic structure adjustment and the transition to green economy and, on the other hand, restricted by the factors of resources, environment and energy. Therefore, the developed countries shall also provide fund and technical aids for the developing countries to help them develop green economy and low-carbon economy, enhance their ability and activeness in dealing with environmental problems and participate in international environmental cooperation in a better way. In environment and trading, intellectual property rights protection and environmental technology transfer, the developed countries shall respect the development demand and rights of developing countries, shall not erect barrier to the economic development and trade of developing countries or take trade protectionism in disguised form on the ground of environmental protection or in the name of green economy and green standard, shall also not place obstacles in the technology transfer to developing countries under the banner of protecting intellectual property rights. As for the developing countries, at the primary stage of transforming to green economy, they shall accelerate to form and implement the sustainable development strategy applicable for the basic conditions of themselves to obtain adequate support from developed countries and lay the foundation for further global environmental cooperation. The success of internal environmental cooperation relies on the good faith of the participating subjects and the practical measures adopted, thus the countries shall start from the common interest of the universe, transfer the sovereignty more, keep on the

promise on environmental cooperation, emphasize on long-term interest and global interest, make concerted efforts and take the initiative to protect the earth environment that the human beings depend on. So, we shall further consolidate and deepen the environmental cooperation among the governments, expand the cooperation fields, form the new pattern of environmental cooperation with reasonable structure and prominent key points and carry out the collaboration in key fields under more flexible and improved cooperation mechanism to really form the strong composite force of global environment improvement.

15.2.5 To Reinforce the Guarantee of Organization Mechanism and Establish Effective Framework of Global Environment Improvement

Global environment improvement includes the standardization of various levels and areas such as inter-governmental organizations and non-governmental organizations, financing mechanisms, policy instruments, rules and procedures, etc. The key of global environment improvement lies in constructing effective global improvement framework to direct and coordinate the practical activities of different countries and regions in enhancing environmental protection and promoting sustainable development. The international mechanisms at present have not solved the deteriorating environmental problems worldwide yet, therefore, the international organizations and mechanisms of international environmental protection shall have further development. First, we shall give play to the core leadership and organization & coordination action of United Nations further, guide the related agencies, multilateral mechanisms and treaty mechanisms of international community to take concerted action for sustainable development; give play to the positive role of the related UN agencies in the aspect of various environmental problems resolution and the field of sustainable development such as the United Nations Economic and Social Council (ECOSOC), the United Nations Commission on Sustainable Development (CSD), the United Nations Conference on Trade and Development (UNCTAD), the United Nations Educational Scientific and Cultural Organization (UNESCO), World Health Organization (WHO) and World Meteorological Organization (WMO), etc., promote and implement the related international documents such as Agenda 21 and Plan of Implementation of the World Summit on Sustainable Development. Secondly, we shall further strengthen the function of the United Nations Environment Programme (UNEP) and give play to its important role in global environment improvement. Rather than a standing institution, UNEP reports to the General Assembly through ECOSOC; headquartered at Nairobi of Kenya, its function is restricted greatly. So, it is recommended to define UNEP as a special global environment improvement institution to be conferred with new functions and tasks, offered with firmer fund guarantee, wider membership

foundation and greater power to support the environmental science research and coordinate global environmental strategy; raise the status and importance of sustainable development mechanism in UN system; by promoting the status of UNEP, integrate and lead global environmental affairs, supervise international environmental problems effectively and ensure the effective implementation of environmental protection in international community. Thirdly, we shall facilitate the reform of CSD and further promote international environmental cooperation. CSD is one of the forums of UN discussing and deliberating international environment and development cooperation, which play a positive role in mobilizing international environmental cooperation and urging the decisions of the United Nations Conference on Environment and Development (UNCED) but the authoritative weight and influence are limited still. According to the proposal raised at Rio+20, the United Nations Conference on Sustainable Development, high level political forum is planned to build to replace CSD and supervise the performance of environmental protection in the countries and regions. Furthermore, international financial institutions, world trade organizations and multilateral development banks shall involve sustainable development into their planning and projects and coordinate with the relevant UN agencies to combine environmental protection and economic development in a more organic way. Finally, we shall give full play to the role of non-governmental organizations in global environment improvement. The non-governmental organizations on environment operate around global ecological environmental protection. As the reserve force of governments and international organizations in environmental policies, they are the important element and drive in global environment improvement system. We shall give full play to the powerful functions of the non-governmental organizations (such as the International Union for Conservation of Nature (IUCN), World Wildlife Fund (WWF) and Greenpeace) in environment management and supervision, participating in environmental protection and improvement, popularizing environmental protection education and enhancing environmental protection consciousness, promoting public expression and the communication between the public and the governments thus to make a positive contribution to environmental protection and sustainable development.

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